

- 20 -

## Patent claims

1. Process for the manufacture of a catalyst, which contains at least silver, comprising at least one of the two following steps:
- 5
- (I) reaction of a silver-containing component with at least one complexing agent,
  - (II) reaction of a silver-containing component with at least one reducing agent,
- 10
- characterized in that the at least one step is carried out at least partially in absence of light or at temperatures below the room temperature or in absence of light and at temperatures below the room temperature.
- 15 2. Process according to claim 1, characterized in that the process optionally contains at least one further of the following steps:
- (III) bringing into contact of the silver-containing component from (I) and/or (II) with a support,
  - (IV) calcination of the support from (III), which was brought into contact,
- 20
- wherein one of said steps, or both steps, optionally can be carried out in absence of light or at temperatures below the room temperature, or in absence of light and at temperatures below the room temperature.
- 25
3. Process according to claim 2, characterized in that the step of the calcination takes place at temperatures of from 200 °C to below 300 °C.
- 30 4. Process according to at least one of the preceding claims, characterized in that the at least one complexing agent is selected from the group contain-

- 21 -

ing amines, diamines, alcohols, alkanediols, aminoalcohols, EDTA, carboxylic acids, functionalized carboxylic acid and carboxylic diacids as well as that the at least one reducing agent is selected from the group containing alkanes, amines, alcohols, hydrogen, hydrogen-containing compounds, aminoalcohols, carboxylic acids.

5  
10  
15  
20  
25  
30

5. Process according to at least one of the preceding claims, characterized in that the at least one catalyst is applied on a support as active mass or is brought into contact with a support, wherein the support is selected from the following group containing silicates; alumina oxides; oxides of the metals of the Main and Auxiliary Groups; mixed oxides, or mixed oxides or oxides, in which parts of the lattice sites of a pure oxide are replaced by at least one further element; carbon-containing substances; nitrides as well as mixtures of at least two of the before-mentioned support materials.

6. Catalyst, which contains at least silver, characterized in that the process for its manufacture contains at least one of the two following steps:

- (I) reaction of a silver-containing component with at least one complexing agent,
- (II) reaction of a silver-containing component with at least one reducing agent,

as well as that at least one of said steps is carried out at least partially in absence of light or at temperatures below the room temperature or in absence of light and at temperatures below the room temperature.

7. Catalyst according to claim 6, characterized in that besides silver at least one further element of the Periodic Table of the Elements is present.

- 22 -

8. Catalyst according to claim 7, characterized in that the at least one further element is selected from the group comprising K, Rb, Cs, Sr and Ba.
9. Use of the catalyst from at least one of the claims 7 to 8, or the catalyst  
5 produced with a process according to at least one of the claims 1 to 6, for the reaction of at least one substrate with at least one C-C-double bond in presence of at least one oxygen-containing or oxygen-supplying component.
- 10 10. Use according to claim 9, characterized in that the at least one substrate with C-C-double bond is 1,3-butadiene, and that as product at least vinyl oxirane yields, or that the at least one substrate with C-C-double bond is 1,3-butadiene or that as product at least vinyl oxirane yields.
- 15 11. Use according to claim 9 or 10, characterized in that the reaction takes place in a fixed bed.

20

25

30